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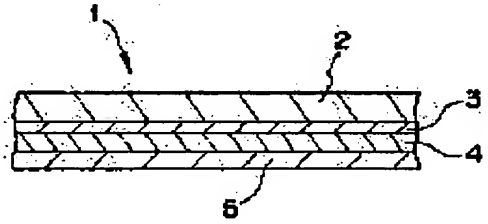
(54) LID MATERIAL

(57)Abstract:
PROBLEM TO BE SOLVED: To have good electrostatic properties and to provide good adhesive and peeling properties by forming an oriented resin layer, a heat sealant layer which is placed on one side of the oriented resin layer through a thermoplastic resin layer composed of a self-adhesive thermoplastic resin, and a static electricity diffusion layer containing mainly a transparent crystalline organic semiconductor mounted on it.
SOLUTION: A lid material 1 has an oriented resin layer 2, a heat sealant layer 4 which is laminated on one side of the layer 2 through a thermoplastic resin layer 3 of a self-adhesive thermoplastic resin, and a static electricity diffusion layer 5. The layer 2 is made by a process in which two or more layers 2 of the same or different kinds of thermoplastic resins are laminated. The self-adhesive thermoplastic resin which constitutes the layer 3 is made from linear saturated polyester obtained by the polycondensation of an esterified product of multivalent carboxylic acid and multivalent alcohol. The layer 5 contains mainly a transparent crystalline organic semiconductor and has surface resistivity of 105-1012Ω and 99% electric charge attenuation time of not exceeding 2sec.



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CLAIMS

[Claim(s)]
[Claim 1] Lid material characterized by having the heat sealant layer formed in one field of an extension resin layer and this extension resin layer through the thermoplastics layer which consists of thermoplastics of a self-adhesive property, and the static electricity diffusion layer which uses as a principal component the transparence crystallinity organic semiconductor formed on this heat sealant layer.
[Claim 2] Lid material according to claim 1 characterized by equipping the field of another side of said extension resin layer with an antistatic layer.
[Claim 3] Said extension resin layer is lid material according to claim 1 or 2 characterized by carrying out the laminating of the congener or two or more extension resin layers of a different kind which consist of thermoplastics.
[Claim 4] Said extension resin layer is lid material according to claim 1 to 3 characterized by being what consists of at least one sort of polyester resin, polyamide resin, polycarbonate resin, and polyolefin resin.
[Claim 5] the line obtained by carrying out the polycondensation of it after the thermoplastics of said self-adhesive property carries out the ester reaction of a multiple-valued carboxylic acid and the polyhydric alcohol -- the lid material according to claim 1 to 4 characterized by being saturated polyester resin.
[Claim 6] Said heat sealant layer is lid material according to claim 1 to 5 characterized by containing at least one sort of polyester resin, polyurethane resin, vinyl chloride vinyl acetate copolymer resin, acrylic resin, and an ethylene-vinylacetate copolymer.
[Claim 7] Said static electricity diffusion layer is lid material according to claim 1 to 6 which surface resistivity is within the limits which is 105-1012ohms, and is characterized by the charge damping time being 2 or less seconds 99%.
[Claim 8] Lid material according to claim 1 to 7 characterized by for total light transmission being 80% or more, and a haze value being 30% or less.

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DETAILED DESCRIPTION

[Detailed Description of the Invention]
[0001]
[Field of the Invention] This invention relates to the lid material equipped with the antistatic property of using for the container made of synthetic resin which is applied to lid material, especially contains electronic parts etc. as contents.
[0002]
[Description of the Prior Art] Conventionally, various components, solid or liquefied food, etc. are held in the container made of synthetic resin, and sealing by lid material, circulating and keeping opening is performed.
[0003] For example, electronic parts are contained in each embossing section of the carrier tape on which much embossing was formed, and embossing carrier mold taping which carried out thermal melting arrival and sealed lid material (covering tape) on the carrier tape so that the embossing section might be covered is used. The carrier tape used for such embossing carrier mold taping is usually formed using the ingredient with easy sheet forming, such as a polyvinyl chloride, polystyrene, polyester, and a polycarbonate. Moreover, lid material consists of a layered product equipped with the heat sealant layer formed in one field of an extension resin film and this film. And in the mounting process of electronic parts, in order to take out the electronic parts contained by embossing carrier mold taping, it is required that lid material can exfoliate.
[0004] Moreover, in embossing carrier mold taping by which lid material was heat sealed, it is necessary to perform inspection of whether to fill up with electronic parts in the shipment culmination and the appearance of electronic parts, and malfunctioning (void of the deflection of a lead, a crease, and the packaging section etc.) visually.
[0005] Furthermore, a means to prevent this with static electricity generated in case static electricity which the electronic parts contained contact the embossing section of a carrier tape or lid material, and generate, and lid material exfoliate since there is a danger that degradation of electronic parts and destruction will arise is required of a carrier tape and lid material.
[0006] As a prevention means of static electricity generating in a carrier tape, electric conduction powder, such as a conductive carbon particle and a metallic oxide, and a metal particle are scoured in a carrier tape, or applying is performed. Moreover, making the heat sealant layer which contacts electronic parts and directly contain conductive impalpable powder as a prevention means of static electricity generating in lid material is performed (JP,7-67774,B). Since it has transparency comparatively, especially the thing that mixed in the heat sealant layer the impalpable powder which electric-conduction-ized metallic oxides (the tin oxide, zinc oxide, etc.) is often used.
[0007]
[Problem(s) to be Solved by the Invention] However, although predetermined reinforcement is required so that lid material may exfoliate and omission of electronic parts may not produce the thermal melting arrival of the lid material to a carrier tape during transportation of embossing carrier mold taping, and storage If the deflection (it considers as the difference of the maximum of thermal melting arrival reinforcement and the minimum value and a following zip rise) of this thermal melting arrival reinforcement and thermal melting arrival reinforcement is too large There was a problem that the accident on which a carrier tape vibrates and electronic parts jump out of the embossing section of a carrier tape in the case of exfoliation of the lid material in the mounting process of electronic parts occurred. Therefore, although lid material was pasted up by sufficient reinforcement for a carrier tape and it was required that the detachability at the time of electronic-parts use should have been good, there was a problem that good detachability was not acquired, in the lid material which mixed conductive impalpable powder etc. in the conventional heat sealant layer.

[0008] Moreover, although it had comparatively good transparency, the decentralization at the time of the heat sealant stratification was difficult for the lid material which mixed the conductive impalpable powder of a metallic oxide in the heat sealant layer, and in order to acquire the transparency in which the visual inspection of electronic parts is possible, it had the problem that the skilled distributed technique was required and the rise of a manufacturing cost was not avoided.
[0009] Furthermore, when a surfactant was applied to a heat sealant layer, the surface state of the heat sealant layer of lid material was changed, seal nature became unstable, and there was a problem that do not become the cause of a poor seal, and the stable antistatic effectiveness was not acquired since the static electricity spreading effect has the large dependency over the temperature under storage and humidity.
[0010] This invention aims at offering the lid material which is made in view of such a situation, and has the outstanding static electricity property, and combines the high adhesive property to the container made of synthetic resin, and good detachability.
[0011]
[Means for Solving the Problem] In order to attain such a purpose, this invention was considered as a configuration which is equipped with the heat sealant layer formed in one field of an extension resin layer and this extension resin layer through the thermoplastics layer which consists of thermoplastics of a self-adhesive property, and the static electricity diffusion layer which uses as a principal component the transparence crystallinity organic semiconductor formed on this heat sealant layer.
[0012] Moreover, it considered as a configuration which equips the field of another side of the lid material aforementioned extension resin layer of this invention with an antistatic layer.
[0013] Furthermore, a configuration to which, as for the lid material of this invention, the laminating of the congener or two or more extension resin layers of a different kind which consist of thermoplastics should be carried out in said extension resin layer, A configuration which is what said extension resin layer becomes from at least one sort of polyester resin, polyamide resin, polycarbonate resin, and polyolefin resin, A configuration the line from which it carried out the polycondensation and was obtained after the thermoplastics of said self-adhesive property carried out the ester reaction of a multiple-valued carboxylic acid and the polyhydric alcohol -- as [be / it / saturated polyester resin] -- Said heat sealant layer considered as a configuration which contains at least one sort of polyester resin, polyurethane resin, vinyl chloride vinyl acetate copolymer resin, acrylic resin, and an ethylene-vinylacetate copolymer.
[0014] Moreover, the surface resistivity of said static electricity diffusion layer is within the limits which is 105-1012ohms, and the lid material of this invention was taken as a configuration [as / whose charge damping time is 2 or less seconds] 99%.
[0015] Furthermore, the lid material of this invention was taken as a configuration [as / whose total light transmission is 80% or more / whose haze value is 30% or less].
[0016] In above-mentioned this invention, the laminating of a heat sealant layer and the static electricity diffusion layer is carried out to one field of an extension resin layer through the thermoplastics layer which lid material becomes from the thermoplastics of a self-adhesive property. The cohesive failure in the above-mentioned thermoplastics layer in the condition that the above-mentioned lid material was heat sealed by the container made of synthetic resin at the static electricity diffusion layer side, Or since exfoliation between the layers of the above-mentioned thermoplastics layer and a heat sealant layer is possible, Regardless of heat-sealing reinforcement, it can carry out stably [exfoliation of lid material], and certainly. Moreover, the static electricity diffusion layer Since it has good static-free nature, without the transparence crystallinity organic semiconductor which is a principal component being dependent on humidity The antistatic property stabilized in lid material is given, and this transparence crystallinity organic semiconductor is transparent and colorless, and since the heat-sealing nature of a heat sealant layer is not affected, lid material is equipped with the outstanding static electricity property and the visibility of contents.
[0017]
[Embodiment of the Invention] Hereafter, it explains, referring to a drawing about the gestalt of operation of this invention.
[0018] Drawing 1 is the outline sectional view showing 1 operation gestalt of the lid material of this invention. The lid material 1 is equipped with the heat sealant layer 4 and the static electricity diffusion layer 5 by which the laminating was carried out through the extension resin layer 2 and the thermoplastics layer 3 which becomes one field of this extension resin layer 2 from the thermoplastics of a self-adhesive property in drawing 1 .
[0019] The extension resin layer 2 Polyester resin, such as polyethylene terephthalate (PET), Polyolefin resin, such as polyamide resin, such as nylon, polycarbonate resin, and polypropylene, Polyimide (PI),

polyether sulphone (PES), a polyether ether ketone (PEEK), Polyether imide (PEI), polyphenylene sulfide (PPS), Polyarylate (PA), the polyester ether (PEE), polyamidoimide (PAI), It can form with an uniaxial stretched film or biaxially oriented films, such as all aromatic polyamide (APA), Pori parabanic acid (PPA), polyoxadiazole (POD), and the poly hydantoin (PHY).

[0020] Moreover, the extension resin layer 2 is a consistency 0.915 - 0.940 g/cm3. Ethylene-alpha olefin copolymer, A 50 - 90 % of the weight of styrene, and 50 - 10 % of the weight [of butadienes] styrene-butadiene block copolymer, Among the hydrogenation object of a 10 - 50 % of the weight of styrene, and 90 - 50 % of the weight [of butadienes] styrene-butadiene block copolymer, and high impact polystyrene, at least an ethylene-alpha olefin copolymer and a styrene-butadiene block copolymer It can form with the uniaxial stretched film or biaxially oriented film which fabricated the resin mixture which consists of three or more sorts of included resin.

[0021] In this case, the ethylene-alpha olefin copolymer to be used is a copolymer of ethylene, and a butene, a pentene, a hexene, a heptene, octene and 4-methyl pentene and 1 grade etc. The consistencies of such an ethylene-alpha olefin copolymer are 0.915 g/cm3. The following or 0.940g/cm3 When exceeding, the membrane formation nature of the extension resin layer 2 by combination with a styrene-butadiene block copolymer falls and is not desirable.

[0022] Moreover, if the adhesiveness of a film increases that the amount of styrene which constitutes the styrene-butadiene block copolymer used for formation of the extension resin layer 2 is less than 50 % of the weight, and handling becomes difficult and it exceeds 90 % of the weight, adhesion with the thermoplastics layer 3 in low temperature worsens and is not desirable.

[0023] And let the mixing ratios of the ethylene-alpha olefin copolymer and styrene-butadiene block copolymer in the extension resin layer 2 be 10 - 90 % of the weight of ethylene-alpha olefin copolymers, and 90 - 10 % of the weight of styrene-butadiene block copolymers. When a styrene-butadiene block copolymer exceeds [the amount of ethylene-alpha olefin copolymers] 90 % of the weight less than 10% of the weight, the membrane formation nature of the extension resin layer 2 becomes low, and the transparency of lid material falls and is not desirable, either. On the other hand, the amount of ethylene-alpha olefin copolymers exceeds 90 % of the weight, when a styrene-butadiene block copolymer is less than 10 % of the weight, the adhesion force of the extension resin layer 2 and the thermoplastics layer 3 is too small, and the peel strength of lid material is not less [proper reinforcement], and desirable.

[0024] When using the hydrogenation object and high impact polystyrene of a styrene-butadiene block copolymer for the extension resin layer 2 and forming with four sorts of resin, the 10 - 90 % of the weight of the above ethylene-alpha olefin copolymers, As opposed to the 90 - 10 % of the weight [of styrene-butadiene block copolymers] resin constituent 100 weight section It is desirable to carry out 5-30 weight section addition of the hydrogenation object of a 10 - 50 % of the weight of styrene and 90 - 50 % of the weight [of butadienes] styrene-butadiene block copolymer, and to carry out 5-50 weight section addition of the high impact polystyrene.

[0025] Moreover, when using the hydrogenation object of a styrene-butadiene block copolymer for the extension resin layer 2 and forming with three sorts of resin, it is desirable to carry out 5-30 weight section addition of the hydrogenation object of a styrene-butadiene block copolymer to the 10 - 90 % of the weight of the above ethylene-alpha olefin copolymers and 90 - 10 % of the weight [of styrene-butadiene block copolymers] resin constituent 100 weight section.

[0026] Furthermore, when using high impact polystyrene for the extension resin layer 2 and forming with three sorts of resin, it is desirable to carry out 5-50 weight section addition of the high impact polystyrene to the 10 - 90 % of the weight of the above ethylene-alpha olefin copolymers and 90 - 10 % of the weight [of styrene-butadiene block copolymers] resin constituent 100 weight section.

[0027] Such an extension resin layer 2 can give thermal resistance and transparency to the lid material 1, and it is [the transparency of the lid material 1] desirable that total light transmission is 80% or more, and a haze value is 30% or less. The thickness of the extension resin layer 2 can be suitably set up according to the purpose of using lid material, for example, can be set to about 6-100 micrometers. The reinforcement of the lid material 1 is weak in the thickness of an extension resin layer being less than 6 micrometers, and there is a possibility of producing cutting at the time of the high-speed exfoliation from the container made of synthetic resin. Moreover, if it exceeds 100 micrometers, it is low, and the heat-conducting characteristic at the time of heat sealing needs to make temperature of a heat-sealing bar high, and is not desirable. In addition, surface treatment, such as corona treatment, plasma treatment, and sandblasting processing, may be beforehand performed to the field in which the thermoplastics layer 3 of this extension resin layer 2 is formed if needed, and an adhesive property with the thermoplastics layer 3 may be raised to it. Moreover,

what performed static electricity generating prevention processing if needed can be used.
[0028] The thermoplastics of a self-adhesive property which constitutes the thermoplastics layer 3 Multiple-valued carboxylic acids, such as a terephthalic acid, isophthalic acid, a maleic acid, a maleic-acid derivative, a succinic acid, an adipic acid, and a sebacic acid, Ethylene glycol, a diethylene glycol, a glycerol, trimethylol propane, 1, 2-propylene glycol, 1,4-butanediol, 1, 5-PENTA diol, the line obtained by carrying out a polycondensation after carrying out the ester reaction of the polyhydric alcohol, such as 1,6-hexanediol, neopentyl glycol, and a polyethylene glycol, -- it consists of one sort or two sorts or more of combination of polyester resin. Moreover, the thermoplastics layer 3 may be formed, combining the thermoplastics with which glass transition points (Tg) differ among the above thermoplastics of a self-adhesive property two or more sorts.
[0029] The content of the above-mentioned thermoplastics of a self-adhesive property in this thermoplastics layer 3 has about 20 - 100 desirable % of the weight, and becomes [bond strength with the thermoplastics layer 3, the extension resin layer 2, or the heat sealant layer 4] weak that content is less than 20 % of the weight and is not desirable. Moreover, thickness of the thermoplastics layer 3 can be set to about 0.1-10 micrometers. If the bond strength of the thermoplastics layer 3 and the heat sealant layer 4 becomes it weak that thickness is less than 0.1 micrometers and it exceeds 10 micrometers, in case the thermoplastics layer 3 takes out a flash and electronic parts at the time of heat sealing with containers made of synthetic resin, such as a carrier tape, it may become obstructive and is not desirable.
[0030] Moreover, in this invention, the film with which the thermoplastics layer which consists of the above thermoplastics of a self-adhesive property beforehand was formed in one field of the polyester resin film as an extension resin layer can be used.
[0031] In case the lid material 1 by which thermal melting arrival was carried out to the container made of synthetic resin by providing the thermoplastics layer 3 which the lid material 1 of this invention becomes from the above thermoplastics of a self-adhesive property is exfoliated, the exfoliation between the layers of the thermoplastics layer 3 and the heat sealant layer 4 (interlaminar peeling) or the cohesive failure in the thermoplastics layer 3 arises. The peel strength in this case is weaker than the bond strength of the heat sealant layer 4 and the container made of synthetic resin through the static electricity diffusion layer 5 mentioned later, and it is desirable that it is the range of 200-1200g / 15mm. If peel strength is set to 200g / less than 15mm, in case the container after carrying out thermal melting arrival of the lid material will be transported, exfoliation arises between the layers of the thermoplastics layer 3 and the heat sealant layer 4, and there is a danger that contents will drop out. Moreover, it is [a possibility that the container made of synthetic resin may vibrate and contents may jump out in the case of exfoliation of lid material] and is not desirable if peel strength exceeds 1200g / 15mm. Moreover, a zip rise (difference of the maximum of peel strength and the minimum value) has desirable 50g / 2mm or less. It is [a possibility that the container made of synthetic resin may vibrate and contents may jump out in the case of exfoliation of lid material] and is not desirable if a zip rise exceeds 50g / 2mm.
[0032] In addition, the above-mentioned peel strength is the value of 180-degree exfoliation under 23 degrees C and 40%RH ambient atmosphere (exfoliation rate = a part for 300mm/). Moreover, the difference of the maximum of peel strength when a zip rise carries out the slit of the lid material which carried out thermal melting arrival to the container made of synthetic resin to 2mm width of face and exfoliates by 15mm width of face, and the minimum value is said. Let the Measuring condition of peel strength be measurement die length of 20cm by 180-degree exfoliation under 23 degrees C and 40%RH ambient atmosphere (exfoliation rate = a part for 300mm/) at this time.
[0033] The heat sealant layer 4 of the lid material 1 of this invention An ethylene-vinyl acetate system, ethylene-vinyl acetate-acrylic, an olefin system, and an elastomer system (a styrene-butadiene-styrene block copolymer --) A styrene-isobutylene-styrene block copolymer, a styrene-ethylene-butylene-styrene block copolymer, It can form with one sort or two sorts or more of combination, thermoplastics and thermoplastic elastomer, as shown in hot melt adhesive, such as a polyamide system, a polyester system, a copolymerized polyester system, and a polyurethane system, and following Table 1 or 3.
[0034]
[Table 1]

表　1（熱可塑性樹脂）

低－、中－、高－密度ポリエチレン アイソタティックポリエチレン エチレン－プロピレン共重合体 ポリブテン－1 エチレン－ブテン－1共重合体 プロピレン－ブテン－1共重合体 エチレン－プロピレン－ジエン共重合体 エチレン－プロピレン－ブテン－1共重合体 エチレン－酢酸ビニル共重合体 イオン架橋オレフィン共重合体（アイオノマー） ポリメチルペンテン ポリビニルアルコール 超高分子量ポリエチレン	ポリオレフィン系
ハイインパクトポリスチレン ポリスチレン スチレン－ブタジエン共重合体 スチレン－イソプレン共重合体 アクリロニトリル－ブタジエン－スチレン（ＡＢＳ）樹脂 アクリロニトリル－スチレン（ＡＳ）樹脂	スチレン系
ポリエチレンテレフタレート ポリテトラメチレンテレフタレート ポリエチレンナフタレート ポリブチレンテレフタレート ポリブチレンナフタレート	ポリエステル系
ポリ塩化ビニル ポリ塩化ビニリデン プロピレン－塩化ビニル共重合体 塩素化塩化ビニル	塩素含有樹脂
テトラフルオロエチレン トリフルオロエチレン ポリフッ化ビニリデン ポリフッ化ビニル	フッ化樹脂
ナイロン６ ナイロン６，６ ナイロン６／６，６共重合体 メタキシリレンアジパミド ナイロン６、１１ ナイロン１１ ナイロン１２ ナイロン１３	ポリアミド系
ポリアミドイミド ポリエーテルイミド	ポリイミド系

[0035]
[Table 2]

表 2（熱可塑性樹脂）

エチレン－エチルアクリレート共重合体 エチレン－アクリル酸共重合体 エチレン－メタクリル酸共重合体 エチレン－メチルメタクリレート共重合体 エチレン－アクリル酸メチル共重合体	エチレン系共重合体
ポリアクリロニトリル エチレン－ビニルアルコール共重合体ケン化物	気体遮断性樹脂系
ポリアクリル酸 ポリアクリルアミド ポリビニルピロリドン ポリビニルメチルエーテル ビニルアルコール－アクリル酸共重合体	吸湿性樹脂系
エチレン－アクリル酸共重合体 イオン架橋オレフィン共重合体 無水マレイン酸グラフトポリエチレン 無水マレイン酸グラフトポリプロピレン アクリル酸グラフトポリオレフィン エチレン－酢酸ビニル共重合体 共重合ポリエステル 共重合ポリアミド	接着性樹脂系
ポリアセタール ポリエーテルスルフォン（サルフォン） ポリフェニレンスルファド（サルファイド） ポリフェニレンオキシド ポリエーテルエーテルケトン アラミド 液晶ポリマー	エンジニアリング プラスチック系
ポリカーボネート ポリメタクリル酸メチル ポリメタクリル酸メチル－スチレン共重合体 ポリメチルメタクリレート ポリアレート ポリウレタン	
上記の各種樹脂系の発泡物、架橋物、水素添加物およびエラストマー	
セルロース エチルセルロース 酢酸セルロース プロピオン酸セルロース 硝酸セルロース	天然高分子系

[0036]
[Table 3]

表 3（熱可塑性エラストマー）

ハードセグメント	ソフトセグメント	構造
スチレン系 ポリスチレン （S）	ポリブタジエン（B） SBS ポリイソプレン（I） SIS ポリエチレン－ポリブチレン（EB） SEBS ポリエチレン－プロピレン（EP） SEPS （SEBS＝SBS水添、SEPS＝SIS水添）	A B C
塩化ビニル系 ポリ塩化ビニル	ポリ塩化ビニル ニトリルゴム（NBR）とのアロイ、 ウレタンとの共重合またはアロイ ポリエステルとのアロイ	D
オレフィン系 ポリエチレン ポリプロピレン	エチレン－プロプレン共重合ゴム ブチルゴム エチレン－酢酸ビニル共重合体（EVA） エチレン－エチルアクリレート共重合体（EEA） エチレン－グリシジルメタアクリレート共重合体（EGMA） ニトリルゴム（NBR） アクリルゴム（AR）	D
ポリエステル系 ポリエステル （ポリブチレン テレフタレート）	脂肪族ポリエーテル ポリテトラメチレングリコールとテレフタル酸との縮合物（PTMEGT） 脂肪族ポリエステル ポリカプロラクトンから構成される ブロック共重合体	C
ポリアミド系 ポリアミド ポリアミド6 ポリアミド66 ポリアミド610 ポリアミド612 ポリアミド11 ポリアミド12	ポリエーテル ポリエチレングリコール（PEG） ポリプロピレングリコール（PPG） ポリテトラメチレングリコール（PTMG） ポリエステル	C
ポリウレタン系 ポリウレタン	ポリカーボネート系ポリオール エーテル系ポリオール カプロラクトン系ポリエステル アジペート系ポリエステル 炭酸エステル系	C
その他 シンジオー1，2－ポリブタジエン ポリエチレン イオンクラスター（アイオノマー） トランス－ポリイソプレン フッ素樹脂 ポリエチレン ポリプロピレン	アタクチック－1，2－ポリブタジエン 11イソブテン－イソプレン共重合ゴム アモルファスポリエチレン アモルファスポリイソプレン フッ素ゴム 天然ゴム 天然ゴム	C E F C A、E D D

構造モデル
A：トリブロックコポリマー　B：スターポリマー
C：マルチブロックポリマー　D：樹脂／ゴムブレンド部分架橋
E：グラフトコポリマー　F：イオン架橋体

Moreover, the heat sealant layer 4 can be formed with one sort or two sorts or more of combination of the following binders (pressure sensitive adhesive).
(Binder)
Rubber system : - A natural rubber system, a styrene-butadiene system, a polyisobutylene system, An isoprene system, acrylic, a silicone system, and an emulsion system : An acrylic emulsion system, A natural-rubber-latex system, a styrene-butadiene latex system and a hot melt system : A styrene-isoprene block-copolymer system, A styrene-butadiene block-copolymer system, a styrene-ethylene-butylene block-copolymer system, An ethylene-vinyl acetate thermoplastic-elastomer system and a drainage system : A polyvinyl alcohol system, A polyacrylamide system, a polyvinyl-methyl-ether system, a polyacrylic acid content polymer system, a dextrin system, and the polyvinyl-pyrrolidone system heat sealant layer 4 It is formed with the thermoplastics which consists of at least one sort of polyester resin, polyurethane resin, vinyl chloride vinyl acetate copolymer resin, and acrylic resin preferably. As a combination of two or more sorts of thermoplastics For example, the mixed resin of polyurethane resin and vinyl chloride vinyl acetate copolymer resin (a mixed ratio has the desirable range of 9:1-4:6), The mixed resin of polyester resin and vinyl chloride vinyl acetate copolymer resin (a mixed ratio has the desirable range of 1:1 to 9.5:0.5), The mixed resin (a mixed ratio has the desirable range of 1:1 to 9.5:0.5) of acrylic resin and vinyl chloride vinyl acetate copolymer resin etc. can be mentioned.
[0037] The thickness of the heat sealant layer 4 has desirable 0.5-5 micrometers. When the thickness of the heat sealant layer 4 is less than 0.5 micrometers, and there is a possibility that heat-sealing nature with the

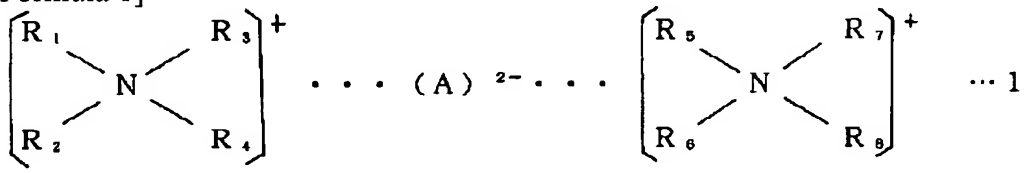
container made of synthetic resin may become inadequate and it exceeds 5 micrometers, cohesive failure arises within the heat sealant layer 4 at the time of exfoliation of the lid material from the container made of synthetic resin, while the heat-sealing agent had pasted lid material and the container made of synthetic resin, it pulls, and in case electronic parts are picked out from the container made of synthetic resin, there is a possibility of producing connection.

[0038] The static electricity diffusion layer 5 of the lid material 1 of this invention is a layer which uses a transparence crystallinity organic semiconductor as a principal component. This static electricity diffusion layer 5 Polyester resin, polyurethane resin, vinyl chloride vinyl acetate copolymer resin, Thermoplastics, such as acrylic resin, an ethylene-vinyl acetate system, ethylene-vinyl acetate-acrylic, an olefin system and an elastomer system (a styrene-butadiene-styrene block copolymer --) A styrene-isobutylene-styrene block copolymer, a styrene-ethylene-styrene block copolymer, Hot melt adhesive, such as a polyamide system, a polyester system, a copolymerized polyester system, and a polyurethane system, One sort or two sorts or more of combination, thermoplastics and thermoplastic elastomer, as shown in above-mentioned Table 1 thru/or 3 is used as a binder. The thing which made this knead or distribute a transparence crystallinity organic semiconductor, Or it is formed on the heat sealant layer 4 using the thing which made the solution (water/isopropyl alcohol) distribute a transparence crystallinity organic semiconductor of the extrusion coat method, the melting extrusion coat method, the calender method, the roll coat method, an atomizing process, etc.

[0039] As transparence crystallinity organic-semiconductor matter used in this invention, a bis-ammonium system organic sulfur semi-conductor as shown in the following general formula (1) can be mentioned.

[0040]

[Formula 1]



（但し、R_1，R_2，R_3，R_4，R_5，R_6，R_7及びR_8は炭素数１～２２の炭化水素基、ヒドロキシ置換炭化水素基、基内にアミド結合及び／又はエステル結合を合計２個以下有する炭素数合計３～３０の炭化水素系の基、中間にエーテル酸素を１個含む炭素数合計２～３０の炭化水素系の基、炭素数合計４～２５のＯ－炭化水素基置換３－オキシ－２－ヒドロキシプロピル基、炭素数合計２～１２２の末端ヒドロキシル基置換ポリオキシ炭化水素基、炭素数合計３～１２２のポリオキシ炭化水素基、カルボニル基を連結基として末端炭化水素基と結合している炭素数合計４～１２２のポリオキシ炭化水素基、同一原子団内に中心窒素原子ともう一つのＮ－置換基とでモルホリン環、炭素数合計５～８の置換もしくは無置換ピリジン環、又は炭素数合計４～２４のＣ－炭化水素基置換イミダゾリン環を形成する残基であり、

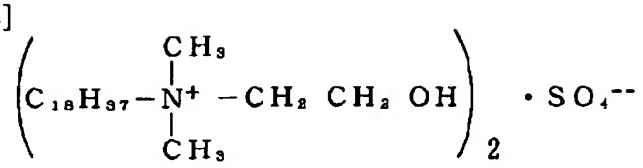
$(A)^{2-}$はSO_3^{--}もしくはSO_4^{--}であり、かつR_1，R_2，R_3，R_4，R_5，R_6，R_7及びR_8のうちの少なくとも１つが炭素数６以上の炭化水素基であるか、もしくはそれを連結させた基である。）

More specifically, the matter shown in the following combination 1-29 can be used.

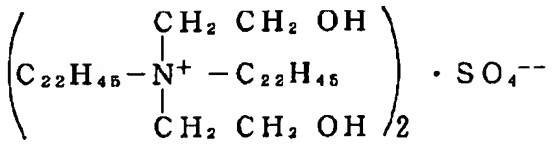
[0041]

[Formula 2]

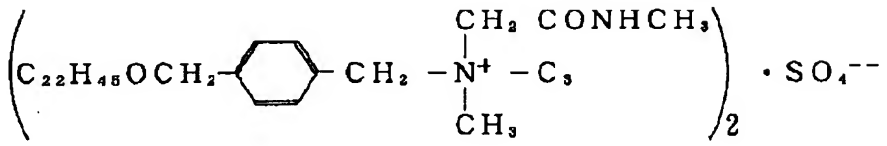
結合体1



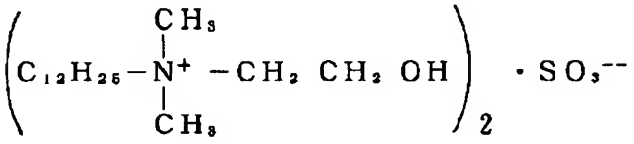
結合体2



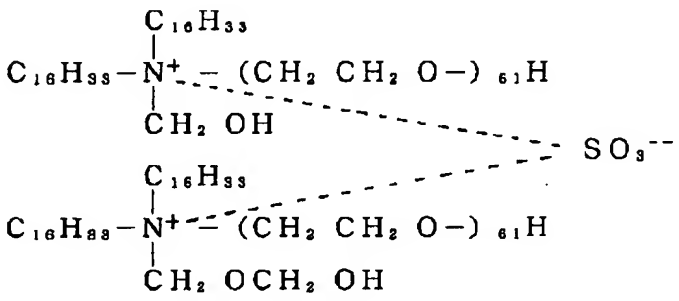
結合体3



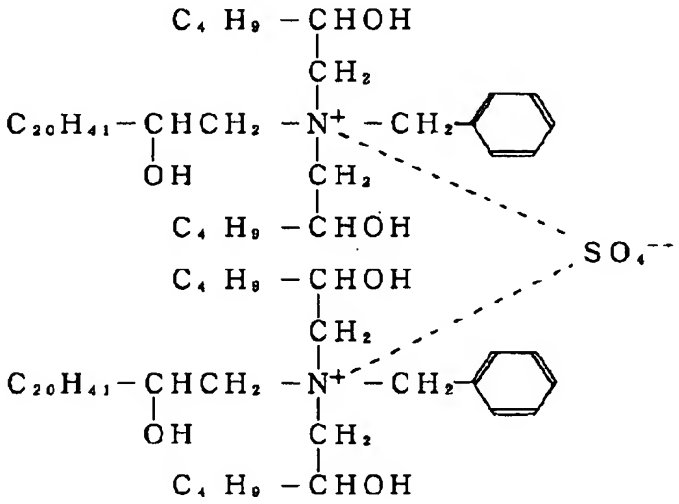
結合体4



結合体5

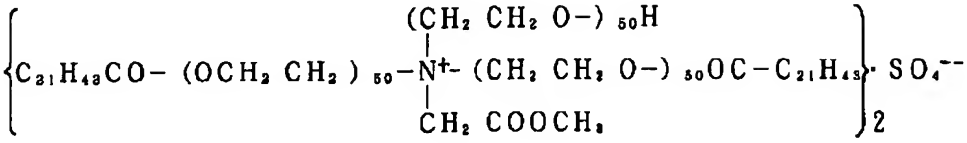


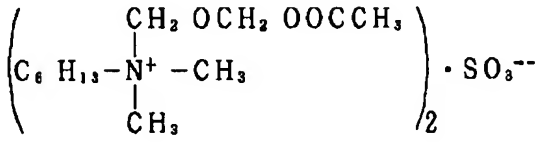
結合体6

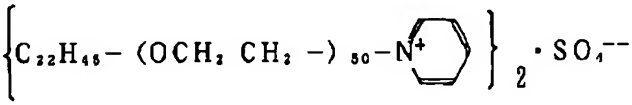


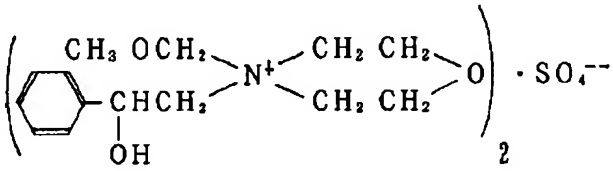
[0042]

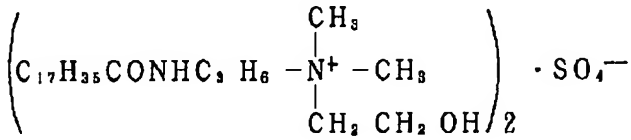
[Formula 3]

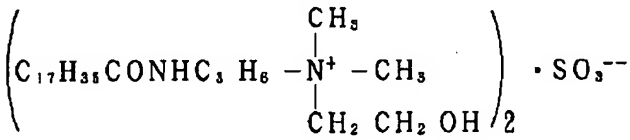
結合体7 

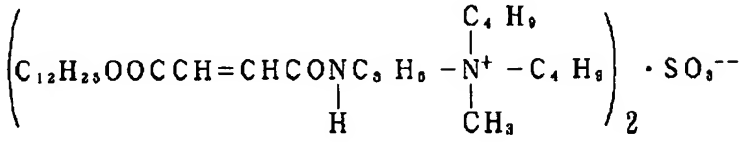
結合体8 

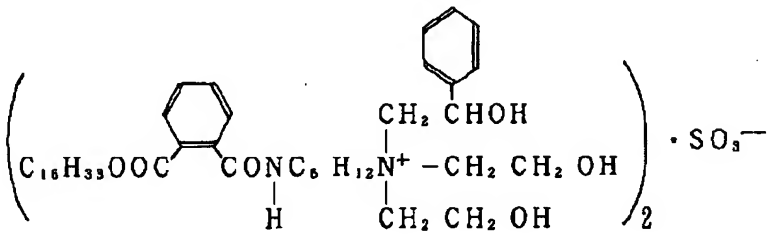
結合体9 

結合体10 

結合体11 

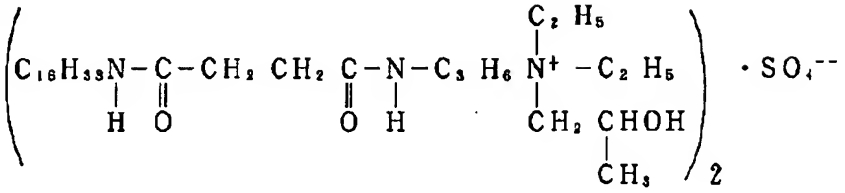
結合体12 

結合体13 

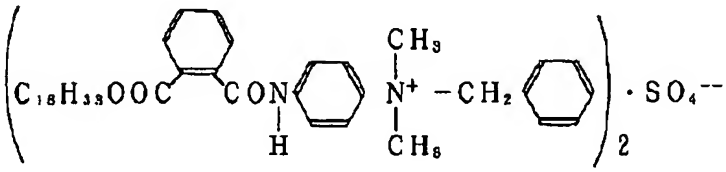
結合体14 

[0043]
[Formula 4]

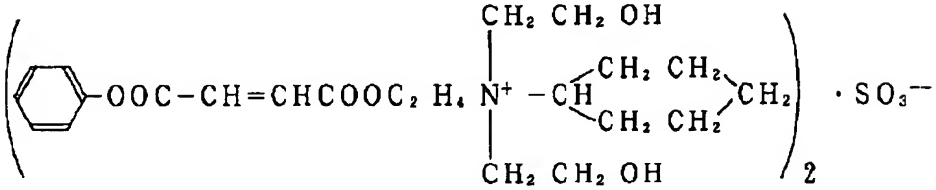
結合体15



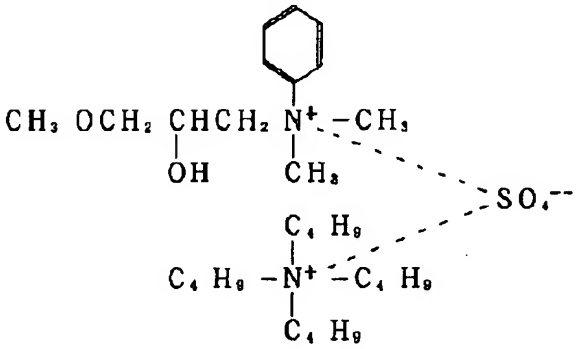
結合体16



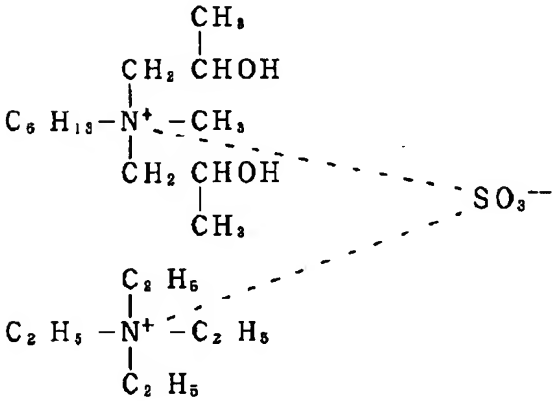
結合体17



結合体18

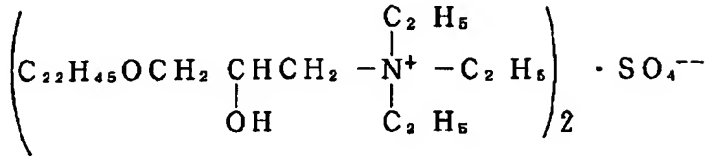


結合体19

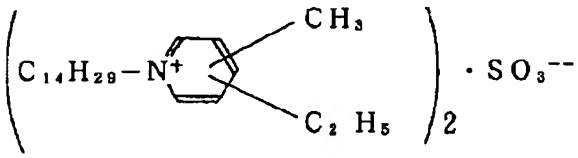


[0044]
[Formula 5]

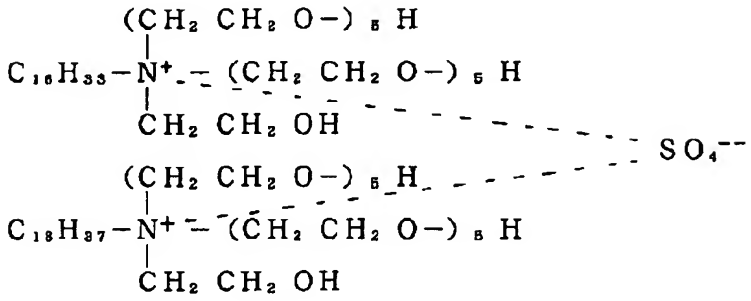
結合体２０



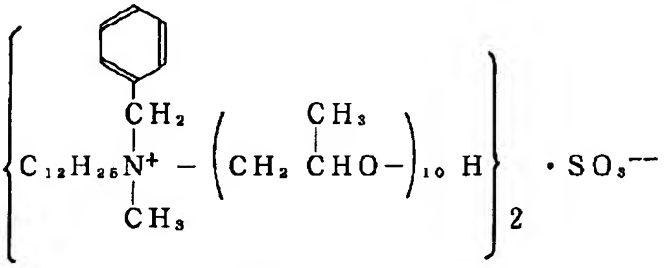
結合体２１



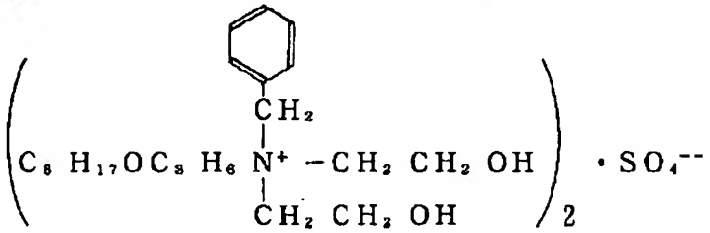
結合体２２



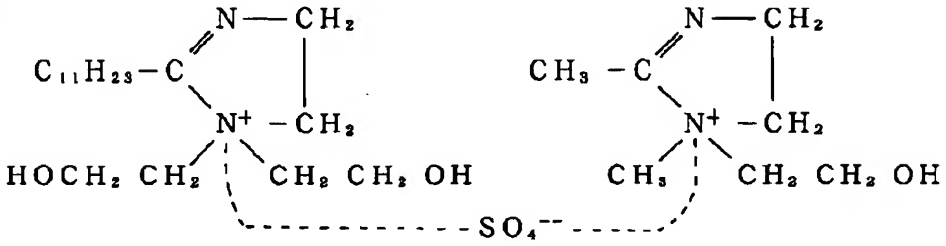
結合体２３



結合体２４

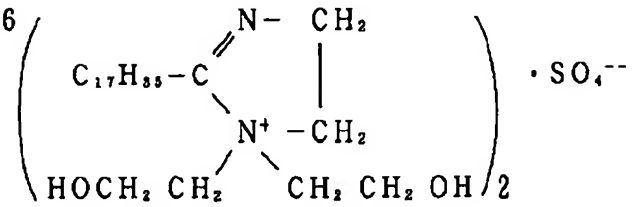


結合体２５

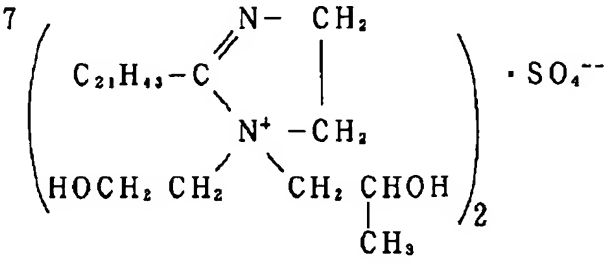


[0045]
[Formula 6]

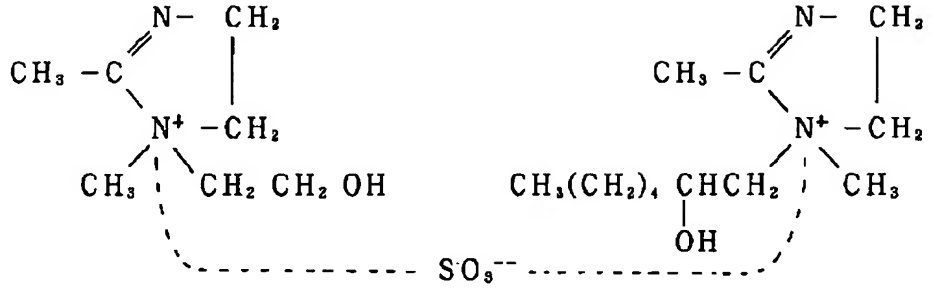
結合体26



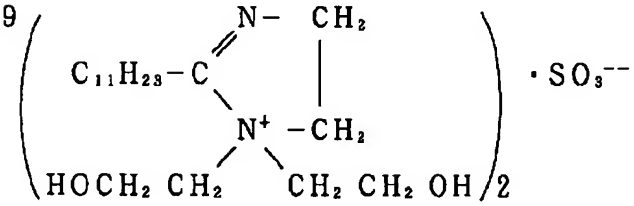
結合体27



結合体28



結合体29



As for such a static electricity diffusion layer 5, it is desirable that it is the range whose thickness is 0.05-2 micrometers, the charge damping time which is within the limits of 105-1012 ohms, and it takes for the surface resistivity to decline 99% from 5000V under 23**5 degrees C and 12**3%RH to the bottom of 22 degrees C and 40%RH is 2 or less seconds, and it has the outstanding static electricity property. When the above-mentioned surface resistivity exceeds 1012 ohms, the static electricity spreading effect gets extremely bad, and it becomes difficult to protect electronic parts from the static electricity destruction, and it is 105. When it becomes under omega, the electrical and electric equipment may energize from the exterior to electronic parts through lid material, and there is a danger that electronic parts will be destroyed electrically. On the other hand, when the charge damping time which is the standard of the diffusion rate of the charge generated with static electricity exceeds 2 seconds, the static electricity spreading effect gets extremely bad, and it becomes difficult to protect electronic parts from the static electricity destruction. In addition, above-mentioned surface resistivity and the above-mentioned charge damping time can be measured based on MIL-B-81705C which is U.S. Military Standard.

[0046] Moreover, the static electricity diffusion layer 5 can be made to contain additives, such as a distributed stabilizer and an antiblocking agent, if needed.

[0047] With an above-mentioned operation gestalt, although an extension resin layer is monolayer structure, the extension resin layer of the lid material of this invention may be multilayer structure. Drawing 2 is the outline sectional view showing other operation gestalten of the lid material of this invention. The lid material 11 is equipped with the heat sealant layer 14 and the static electricity diffusion layer 15 by which the laminating was carried out through the extension resin layer 12 of multilayer structure, and the

thermoplastics layer 13 which becomes one field of this extension resin layer 12 from the thermoplastics of a self-adhesive property in drawing 2 . In addition, the thermoplastics layer 13, the heat sealant layer 14, and the static electricity diffusion layer 15 which constitute this lid material 11 are made into the same thing as the thermoplastics layer 3, the heat sealant layer 4, and the static electricity diffusion layer 5 which constitute the above-mentioned lid material 1, and since things can be carried out, they omit explanation here.

[0048] The laminating of extension resin layer 12A and the extension resin layer 12B is carried out through glue line 12a, and, as for the extension resin layer 12, the thermoplastics layer 3 is formed in the extension resin layer 12B side. Since the same above-mentioned uniaxial stretched film or same above-mentioned biaxially oriented film as the extension resin layer 2 can be used, the extension resin layers 12A and 12B which constitute such an extension resin layer 12 omit explanation here.

[0049] Glue line 12a which constitutes the extension resin layer 12 can use the hardening reactive adhesive which consists of polyester system resin, polyether system resin, polyurethane system resin, ethylene / vinyl acetate copolymer, acrylic resin, epoxy system resin, or these denaturation objects. Rigidity of a lid can be made high by carrying out the laminating of the extension resin layers 12A and 12B through such glue line 12a, and forming the extension resin layer 12, without spoiling transparency.

[0050] Moreover, as glue line 12a which constitutes the extension resin layer 12, adhesives, such as an ethylene-alpha olefin copolymer and an ethylene-acrylic-acid copolymer, an ion bridge formation olefine copolymer, maleic-anhydride graft polyethylene, maleic-anhydride graft polypropylene, acrylic-acid graft polyolefine, an ethylene-vinylacetate copolymer, copolymerized polyester, and a copolymerization polyamide, may be used, the sandwiches lamination of extension resin layer 12A and the extension resin layer 12B may be carried out, and the extension resin layer 12 may be formed. Cushioning properties are given without spoiling transparency by glue line 12a, and the heat-sealing nature of an extension resin layer [such] 12 to the container made of synthetic resin of the lid material 11 improves further.

[0051] The thickness of the above-mentioned extension resin layer 12 can be suitably set up according to the purpose of using lid material, and can be set to about 6-100 micrometers like the extension resin layer 2 which constitutes the above-mentioned lid material 1. Moreover, the extension resin layers 12A and 12B which constitute the extension resin layer 12 can set up thickness in 3-80 micrometers, respectively. Furthermore, the thickness of glue line 12a which constitutes the extension resin layer 12 can be set up in 1-10 micrometers.

[0052] In addition, although an extension resin layer is two-layer structure with an above-mentioned operation gestalt, it is good in the lid material of this invention also considering an extension resin layer as a laminated structure of three or more layers.

[0053] The lid material of this invention may be the mode which has an antistatic layer, or an acid-resisting layer and an antistatic layer on [other than the above operation gestalten] an extension resin layer. Drawing 3 and drawing 4 are the outline sectional views showing other examples of the lid material of such this invention. In drawing 3 , the lid material 21 was equipped with the heat sealant layer 24 and the static electricity diffusion layer 25 by which the laminating was carried out through the extension resin layer 22 and the thermoplastics layer 23 which becomes one field of this extension resin layer 22 from the thermoplastics of a self-adhesive property, and equips other fields of the biaxial-stretching resin layer 22 with the antistatic layer 26. Moreover, in drawing 4 , it has the acid-resisting layer 27 on the antistatic layer 26 further.

[0054] The antistatic layer 26 is formed in the front face of the lid material 21 for the purpose of preventing that the dust adhesion by static electricity occurs. This antistatic layer 26 is the conductive impalpable powder which performed conductive processing to one surfactant, fatty-acid derivative, 4 functional-group nature silicon partial hydrolysate or metal impalpable powder, metallic-oxide system, metallic sulfide system, or sulfate system of an anion system, a cation system, a non-ion system, and a both-sexes system as an antistatic agent, and a layer containing at least one sort of conductive carbon.

[0055] As the above-mentioned anion system surfactant, the mixture of sulfated oil, soap, sulfation ester oil, a sulfation amide oil, the sulfate salts of an olefin, a fatty alcohol sulfate salt, an alkyl-sulfuric-acid ester salt, fatty-acid ethyl sulfonate, an alkyl-sulfonic-acid salt, alkylbenzene sulfonate, naphthalene sulfonic acid, and formalin, succinate sulfonate, a phosphoric ester salt, etc. can be mentioned.

[0056] Moreover, as a cation system surfactant, a primary amine salt, a tertiary amine salt, the 4th class ammonium compound, a pyridine derivative, etc. can be mentioned.

[0057] Moreover, as a non-ion system surface active agent, the ethyleneoxide addition product of the partial fatty acid ester of polyhydric alcohol and fatty alcohol, the ethyleneoxide addition product of a fatty acid, fat

amino or the ethyleneoxide addition product of a fatty-acid amide, the ethyleneoxide addition product of alkylphenol, the ethyleneoxide addition product of an alkyl naphthol, the ethyleneoxide addition product of the partial fatty acid ester of polyhydric alcohol, etc. can be mentioned.
[0058] Furthermore, a carboxylic-acid derivative, an imidazoline derivative, etc. can be mentioned as an amphoteric surface active agent.
[0059] The above antistatic agents can be independently used for the antistatic layer 26, and it can form them on the extension resin layer 22. Moreover, you may form by applying the ink which distributed the antistatic agent to usable thermoplastics in formation of the below-mentioned acid-resisting layer 27. The thickness of such an antistatic layer 26 has desirable about 0.2-20 micrometers.
[0060] The charge damping time which is within the limits of 105-1012 ohms, and it takes for the surface resistivity to decline 99% from 5000V under 23**5 degrees C and 12**3%RH to the bottom of 22 degrees C and 40%RH is 2 or less seconds, and the above-mentioned antistatic layer 26 has the outstanding antistatic effectiveness.
[0061] Moreover, the acid-resisting layer 27 suppresses shadow projection of the scattered reflection in lid material or the light source, and aims at making it easier to view the interior of a container. Such an acid-resisting layer 27 can form one sort, such as calcium fluoride, specific fluoride, lithium fluoride, magnesium flux, a fluoridation lanthanum, fluoridation neodium, a fluoridation cerium, a silicon dioxide, an aluminum oxide, 1 magnesium oxide, a thorium dioxide, lanthanum oxide, silicon monoxide, an oxidization yttrium, a zirconium dioxide, titanium oxide, cerium oxide, a zinc oxide, bisumuth oxide, and a cadmium sulfide, or two sorts or more using the ink distributed to thermoplastics, or can be formed directly. As thermoplastics, a polyester system, a polyurethane system, acrylic, a vinyl chloride vinyl acetate copolymer system, a polyvinyl acetate system, a phenol system, a xylene system, a urea-resin system and a melanin system, a ketone system, a cumarone indene system, a petroleum resin system, a terpene system, a cyclized-rubber system, a chlorinated-rubber system, an alkyd system, a polyamide system, a polyvinyl alcohol system, a polyvinyl-butyral system, a chlorination polypropylene system, a styrene system, an epoxy system, a cellulosic, etc. can be mentioned. When the air doctor coat method, the blade coat method, the knife coat method, the rod coat method, the roll coat method, the gravure coat method, a screen method, the kiss coat method, the bead coat method, the slot orifice coat method, a spray method, etc. can be mentioned and it forms membranes directly as the formation approach of the acid-resisting layer 27 by ink spreading, a vacuum deposition method, the sputtering method, etc. can be mentioned. Any of monolayer structure and multilayer structure are sufficient as such an acid-resisting layer 27, and about 0.01-0.5 micrometers of thickness are [a layer] desirable.
[0062] In addition, in the above-mentioned lid material 21, since the extension resin layer 22, the thermoplastics layer 23, the heat sealant layer 24, and the static electricity diffusion layer 25 are the same as that of corresponding each class which constitutes the above-mentioned lid material 11, explanation is omitted.
[0063] Moreover, the above antistatic layers and acid-resisting layers can be similarly formed in lid material equipped with the extension resin layer of monolayer structure as shown in drawing 1 .
[0064] Next, the lid material 21 shown in drawing 3 is explained to an example with reference to drawing 5 thru/or drawing 8 about exfoliation actuation of the lid material of this invention. First, as shown in drawing 5 and drawing 6 , thermal melting arrival of the lid material 21 as shown in the carrier tape 31 as a container made of synthetic resin equipped with the embossing section 32 at drawing 3 is carried out. This thermal melting arrival is performed to the both ends of the embossing section 32 in the shape of Rhine by predetermined width of face. In the example of illustration, the slash section has shown the Rhine-like thermal melting arrival part H. In this condition, the range of the adhesion reinforcement of the thermoplastics layer 23 of the lid material 21 and the heat sealant layer 24 is 200-1200g / 15mm, and it is small from the bond strength of the heat sealant 24 and the static electricity diffusion layer 25, or the thermal melting arrival reinforcement of the static electricity diffusion layer 25 and the carrier tape 31. Next, if the lid material 21 is exfoliated from the carrier tape 31, in the Rhine-like thermal melting arrival part H, thermal melting arrival of the heat sealant layer 24 and the static electricity diffusion layer 25 will be carried out to the carrier tape 31, and exfoliation will produce them between the layers of the thermoplastics layer 23 and the heat sealant layer 24 (drawing 7). Therefore, the lid material 21 exfoliates, where the Rhine-like thermal melting arrival part H is left on a carrier tape among the heat sealant 24 and the static electricity diffusion layer 25. Or in the Rhine-like thermal melting arrival part H, the cohesive failure within the thermoplastics layer 23 arises, and while thermal melting arrival of the part, the heat sealant layer 24, and the static electricity diffusion layer 25 of the thermoplastics layer 23 had been carried out to the carrier tape

31, the lid material 21 exfoliates (drawing 8 R> 8). That is, the lid material 21 of this invention has the opposite property [say / the high thermal melting arrival nature to the carrier tape 31, and the easy detachability at the time of exfoliation], and after it made sufficiently high thermal melting arrival reinforcement to the container made of synthetic resin and it carries out thermal melting arrival, it can exfoliate certainly in a low zip rise from the container made of synthetic resin.
[0065] It can be suitably chosen by controlling heat-sealing conditions whether the exfoliation between the layers of the above thermoplastics layers 23 and the heat sealant layer 24 (interlaminar peeling) is produced or the cohesive failure in the thermoplastics layer 23 is produced. That is, interlaminar peeling of thermoplastics 23 and the heat sealant layer 24 can be produced by what the conditions at the time of heat sealing are made severe for (it is high in whenever [stoving temperature], and is long in heating time, and pressurization is strengthened), and the cohesive failure within the thermoplastics layer 23 can be produced by making loose the conditions at the time of heat sealing. In the case of interlaminar peeling, as an example of the above-mentioned heat-sealing conditions, it is =120-200 degree C, heating time = 0.3 - 2.0 seconds, and about two pressurization =0.7 - 3.0 kgf/cm whenever [stoving temperature], and, in the case of cohesive failure, they are =90-150 degree C, heating time = 0.1 - 0.5 seconds, and pressurization =0.3 - 1.2 kgf/cm2 whenever [stoving temperature]. It is extent.
[0066] As a container made of synthetic resin set as the use object of the lid material of above this inventions A polyvinyl chloride (PVC), polystyrene (PS), polyester (A-PET) PEN, PET-G, PCTA, polypropylene (PP), a polycarbonate (PC), Containers made of resin, such as a polyacrylonitrile (PAN) and acrylonitrile-butadiene-styrene copolymer (ABS), To these, as a cure against static electricity Or a conductive carbon particle, a metal particle, The antistatic agent of the conductive impalpable powder which gave conductivity to metallic oxides, such as tin oxide, and a zinc oxide, titanium oxide, Si system organic compound, a surfactant, a transparence crystallinity organic semiconductor, an ultraviolet curing mold, or an electron ray hardening mold can be scoured, or what was applied can be mentioned. Moreover, the thing in which the compound sheet plastic which comes to carry out the laminating of PS system, ABS system resin film, or sheet containing carbon black by the co-extrusion in one was formed to one side or both sides of PS system resin sheet or an ABS system resin sheet is also mentioned. Or the thing which made the conductive polymer form in a plastic film front face can also be mentioned as conductive processing.
[0067]
[Example] Next, an example is shown and the lid material of this invention is further explained to a detail.
(Example 1)
The biaxial-stretching polyethylene terephthalate (PET) film (50 micrometers in the S pet 6140 by Toyobo Co., Ltd., thickness) which performed corona treatment to sample 1 one side was prepared. next, the line which consists of a terephthalic acid and ethylene glycol -- the thermoplastics layer which applies to the corona treatment side of the above-mentioned PET film (extension resin layer) the coating liquid which dissolved saturated polyester resin in the solvent (toluene/methyl ethyl ketone = 1/1) by the gravure reverse coat method (spreading thickness = 2 micrometers), is made to dry it, and consists of thermoplastics of a self-adhesive property was formed.
[0068] Next, the heat-sealing agent of the following presentation was applied on the above-mentioned thermoplastics layer by the gravure reverse coat method (spreading thickness = 3 micrometers), it was made to dry and the heat sealant layer was formed.
[0069]
(Presentation of a heat-sealing agent)
- Urethane resin -- 70 weight sections - vinyl chloride vinyl acetate copolymer -- By 30 weight ******, a bis-ammonium system organic sulfur semi-conductor is applied on the above-mentioned heat sealant layer by the gravure reverse coat method (spreading thickness = 1 micrometer), was dried, and the static electricity diffusion layer was formed. This produced the lid material (sample 1) of a configuration as shown in drawing 1 .
The dry lamination of the biaxial-stretching PET film (12 micrometers in thickness) which performed corona treatment to sample 2 one side, and the biaxial-stretching PET film (16 micrometers in thickness) which performed corona treatment to both sides was carried out with urethane system adhesives by the corona treatment side side, and the film (extension resin layer) of two-layer structure was produced.
[0070] On the corona treatment side of 16micromPET in thickness of this film (extension resin layer), the laminating of a thermoplastics layer, a heat sealant layer, and the static electricity diffusion layer was carried out to order like the sample 1, and the lid material (sample 2) of a configuration as shown at drawing 2 was produced.

The lid material (sample 3) of a configuration as the biaxial-stretching nylon film (15 micrometers in thickness) which performed corona treatment was used for both sides instead of the biaxial-stretching PET film which performed corona treatment to sample 3 one side and also it is shown in drawing 2 like a sample 2 was produced.
After carrying out AC processing of the biaxial-stretching PET film (12 micrometers in thickness) which performed corona treatment to sample 4 one side, and the biaxial-stretching PET film (12 micrometers in thickness) which performed corona treatment to both sides, the sandwiches lamination (glue line = 20 micrometers) was carried out with low-density-polyethylene adhesives by the corona treatment side side, and the film (extension resin layer) of two-layer structure was produced.
[0071] On the corona treatment side of this film (extension resin layer), the laminating of a thermoplastics layer, a heat sealant layer, and the static electricity diffusion layer was carried out to order like the sample 1, and the lid material (sample 4) of a configuration as shown at drawing 2 was produced.
The lid material (sample 5) of a configuration as the ethylene-acrylic-acid copolymer performed the sandwiches lamination instead of sample 5 low-density-polyethylene adhesives and also it is shown in drawing 2 like a sample 4 was produced.
The lid material (sample 6) of a configuration as the biaxial oriented film (30 micrometers in thickness) created using the mixed resin of the following presentation instead of the biaxial-stretching PET film (thickness of 16 micrometers) which performed corona treatment to sample 6 both sides was used and also it is shown in drawing 2 like a sample 2 was produced.
[0072]
(Presentation of mixed resin)
- a line -- low density polyethylene -- 70 weight sections - A styrene-butadiene block copolymer -- 20 weight sections - High impact polystyrene -- the line which consists of 10 weight sections comparison sample 1 terephthalic acid and ethylene glycol -- instead of saturated polyester resin The lid material (comparison sample 1) of a configuration as the thermoplastics layer was formed using the mixed resin of the vinyl chloride vinyl acetate copolymer 30 weight section and the nitrocellulose 70 weight section and also it is shown in drawing 1 like a sample 1 was produced.
The static electricity diffusion layer which consists of a comparison sample 2 bis-ammonium system organic sulfur semi-conductor was not formed, and also lid material (comparison sample 2) was produced like the sample 1.
The lid material (comparison sample 3) of a configuration as the surface-active-agent mold antistatic agent (SUTATI side made from Takihara Industry) was used instead of the comparison sample 3 bis-ammonium system organic sulfur semi-conductor and also it is shown in drawing 1 like a sample 1 was produced.
the line which consists of comparison sample 4 terephthalic acid and ethylene glycol -- the direct heat sealant layer was formed in the corona treatment side of a PET film (extension resin layer), without forming the thermoplastics layer using saturated polyester resin, and also lid material (comparison sample 4) was produced like the sample 1.
The lid material (comparison sample 5) of a configuration as the biaxial oriented film (30 micrometers in thickness) created using the mixed resin of a presentation of the comparison sample 5 following was used and also it is shown in drawing 2 like a sample 6 was produced.
[0073]
(Presentation of mixed resin)
- a line -- low density polyethylene -- 40 weight sections - styrene-butadiene block copolymer -- Five weight sections - high impact polystyrene -- Total light transmission, surface resistivity, and the charge damping time were measured on condition that the following whenever [haze] about 55 weight sections, next each above-mentioned lid material (samples 1-6, comparison samples 1-5). Moreover, a heat-sealing bar is used for a conductive polyvinyl chloride resin base material (product made from Peace Chemistry XEG47) for each above-mentioned lid material, and they are 160 degrees C, 0.5 seconds, and 3.0 kgf/cm2. Thermal melting arrival was carried out on conditions, and after that, peel strength was measured on condition that the following, and it asked for the zip rise.
[0074] (Measuring condition of whenever [haze], and total light transmission) It measured in color computer SM[by Suga Test Instruments Co., Ltd.]-5SC.
[0075] (Measuring condition of surface resistivity) It measured by Huy Lester IP by Mitsubishi Petrochemical Co., Ltd. under 22 degrees C and 40%RH.
[0076] (Measuring condition of the charge damping time) The time amount taken to decrease 99% from 5000V under 23**5 degrees C and 12**3%RH is based on MIL-B-81705C, and it is STATIC DECAY

METER-406C made from ETS (Electro-Tech Systems, Inc). It measured.
[0077] (Measuring condition of peel strength) the bottom of 23 degrees C and 40%RH -- setting -- made in Oriental Baldwin -- tensilon universal testing machine HTH-100 It measured. (Exfoliation rate = part 180-degree exfoliation for 300 mm/)
The measurement result and exfoliation gestalt of the above-mentioned item about each lid material were shown in the following table 4.
[0078]
[Table 4]

表 4

蓋 材	ヘーズ度 (%)	全光線透過率 (%)	表面抵抗率 (Ω)	電荷減衰時間 (秒)	剥離強度 (g／15mm)	ジップアップ (g／2mm)	剥離形態 *1
試料1	10	92	10^7	0.01	850	25	層間剥離
試料2	12	90	10^7	0.01	880	20	層間剥離
試料3	13	88	10^7	0.01	800	20	層間剥離
試料4	15	90	10^7	0.01	780	15	層間剥離
試料5	10	88	10^7	0.01	820	20	層間剥離
試料6	25	80	10^7	0.01	800	30	層間剥離
比較試料1	12	89	10^7	0.01	150	15	層間剥離
比較試料2	10	91	10^{13}以上	20< *2	850	20	層間剥離
比較試料3	20	84	10^{13}以上	10	620	40	層間剥離
比較試料4	10	92	10^7	0.01	180	20	層間剥離
比較試料5	55	60	10^7	0.01	750	20	層間剥離

＊1 剥離形態・・・層間剥離：熱可塑性樹脂層とヒートシーラント層との間で剥離
凝集破壊：熱可塑性樹脂層内部破壊による剥離
界面剥離：蓋材と被着体との間で剥離
＊2：減衰せず

Samples 1-6 all showed low surface resistivity (within the limits of 105-1012 ohms), and the charge damping time (2 or less seconds), and the zip rises of peel strength were 50g / 2mm or less in the range of 700-900g / 15mm so that clearly from Table 4. Furthermore, especially the samples 1-5 using the polyester resin film and the polyamide resin film as an extension resin layer are excellent in transparency.
[0079] on the other hand, the line which is thermoplastics of a self-adhesive property -- although the lid material (comparison samples 1 and 4) which is not equipped with the thermoplastics layer which consists of saturated polyester was good in respect of surface resistivity, the charge damping time, and transparency, peel strength was that with which practical use cannot be presented as lid material low (200g / less than 15mm).
[0080] Moreover, each lid material (comparison samples 2 and 3) which is not equipped with the static electricity diffusion layer which consists of a bis-ammonium system organic sulfur semi-conductor had surface resistivity and the large charge damping time, and it was that with which practical use cannot be presented as lid material. Furthermore, the lid material (comparison sample 5) which used the biaxial oriented film created using mixed resin with many contents of high impact polystyrene was that with which practical use cannot be presented as lid material in respect of transparency.
[0081]
[Effect of the Invention] Since according to this invention the laminating of the static electricity diffusion layer which uses as a principal component the heat sealant layer formed in one field of an extension resin layer through the thermoplastics layer which consists of thermoplastics of a self-adhesive property, and a transparence crystallinity organic semiconductor is carried out to this order and it considers as lid material as explained in full detail above The cohesive failure in the above-mentioned thermoplastics layer in the condition that the above-mentioned lid material was heat sealed by the container made of synthetic resin at the static electricity diffusion layer side, Or exfoliation between the layers of the above-mentioned thermoplastics layer and a heat sealant layer is attained. It can carry out stably and certainly by the zip rise with low exfoliation of lid material, control of the peel strength of lid material being easy, and maintaining

the high adhesive property of the lid material to the container made of synthetic resin regardless of heat-sealing reinforcement. Moreover, it is the lid material which the static electricity property which was excellent with the static electricity diffusion layer was given, and was excellent in the visibility of contents. Furthermore, by consisting an extension resin layer of at least one sort of polyester resin, polyamide resin, polycarbonate resin, and polyolefin resin, the transparency of lid material improves more and the visibility of contents becomes what was further excellent.

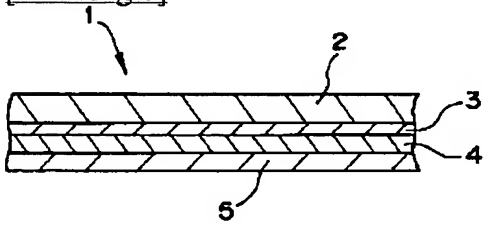
[Translation done.]

* NOTICES *

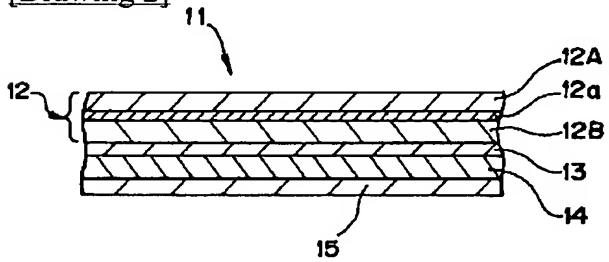
1.This document has been translated by computer. So the translation may not reflect the original precisely.
2.**** shows the word which can not be translated.
3.In the drawings, any words are not translated.

DRAWINGS

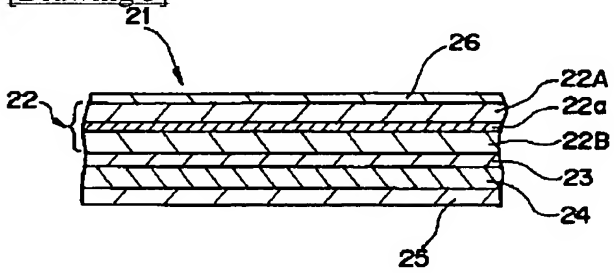
[Drawing 1]



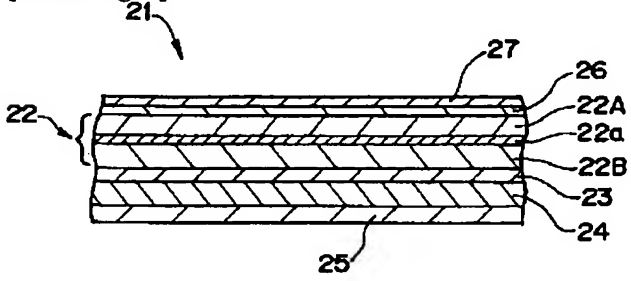
[Drawing 2]



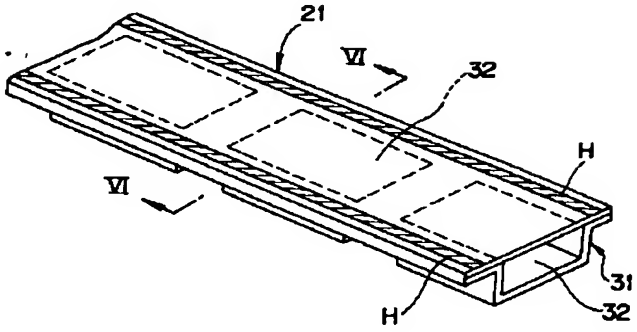
[Drawing 3]



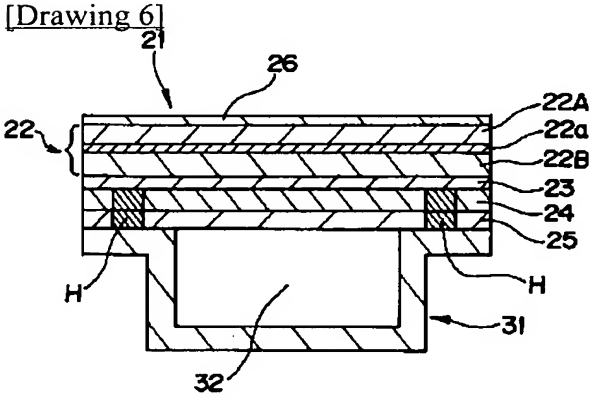
[Drawing 4]



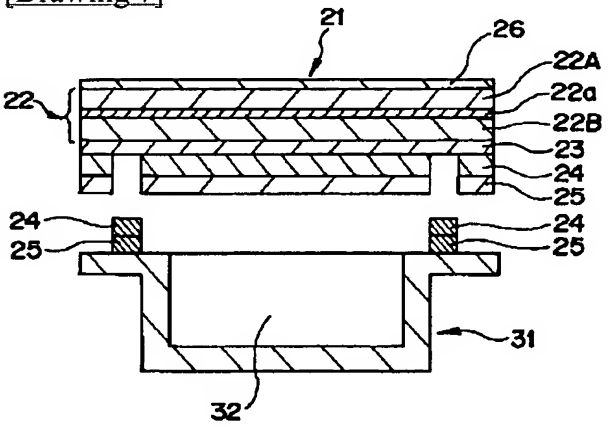
[Drawing 5]



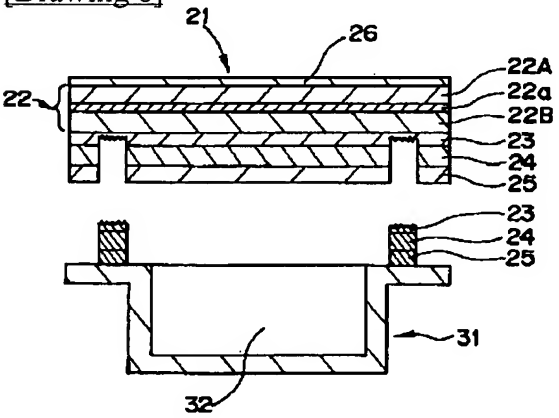
[Drawing 6]



[Drawing 7]



[Drawing 8]



[Translation done.]